

/

(Prunus persica)

(2) (1)
(4) (3)

63 126 .

Meloidogyne incognita

%44 (Kofoid and White, 1919) Chitwood 1949
330-20 3 100 / 90-10
10

3 100 / 36 30 %23.1 %4 *Pratylenchus* spp.

Xiphinema spp.

3 100 / 28 %11

X. intermedium Lamberti *X. pyrenaicum* Dalmasso, 1964

Paratylenchus spp. & Bleve-Zacheo, 1979

Tylenchus *Helicotylenchus* spp. *Amplimerlinius* spp.

46 52 223 %14 %21 %36 %26 spp.
3 100 / 29

Amplimerlinius spp. *Paratylenchus* spp.

%38.5 %3.8 %11.5 *Helicotylenchus* spp.
3 100 120 29 18

M. incognita, Pratylenchus, Xiphinema, Prunus, :

30621 . .

(1)
(2)
(4) (3)

/

First Report: Plant Parasitic Nematodes Associated with Peachs (*Prunus persica*) at Damascus and Hama Governorates, Syria

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ABSTRACT

A study was conducted to investigate the presence of root knot nematode (RKN) and other plant parasitic nematodes associated with Syrian most important peach plantation areas. 126 soil and root samples were taken from 63 peach orchards of Ghuta, Zabadani, Yabrod, Syrghaya and Kharabo at Damascus governorate, and Tezeen, Kufr Ton, Khattab, Arzeh, Sheha, Qamhaneh, Balhasen, Rastan, Mhardeh, Salmieh, Sqalbieh and Sharaya at Hama governorate. We are reporting that *Meloidogyne incognita* (Kofoid and White, 1919) Chitwood 1949 infects 44% of orchards with an average intensity range of 10-90 second stage juveniles per 100 cm³ and average severity range of 20-330 galls per 10 gm roots. RKN did not noticed at any of Damascus governorate peach orchards, however, peach transplants at Al-Nasrieh nursery were severely infected with RKN and problem was solved by eliminating all transplants. *Pratylenchus* spp. presents in 4% and 23.1% of Hama and Damascus governorates with an average intensity of 30 and 36 nematodes per 100 cm³ soil, respectively. *Xiphinema* spp. presented in 11% of sampled Hama orchards with an average intensity of 28 nematodes per 100 cm³ and was not noticed at Damascus governorate. The species; *X. pyrenaicum* Dalmasso, 1964 and *X. intermedium* Lamberti & Bleve-Zacheo, 1979 were classified. *Paratylenchus* spp., *Amplimerlinius* spp., *Helicotylenchus* spp. and *Tylenchus* spp. presents in 26%, 36%, 21%, and 14% of sampled Hama orchards with an average intensity of 223, 52, 46 and 29 nematodes per 100 cm³ soil, respectively. *Paratylenchus* spp., *Amplimerlinius* spp. and *Helicotylenchus* spp. were presented in 11.5%, 3.8 and 23.5 of sampled Damascus orchards, with an average intensity of 18, 26 and 120 nematodes per 100 cm³. This is the first report of plant parasitic nematode associated with Syrian peach orchards.

Key words: *M. incognita*, Peach, *Prunus*, *Pratylenchus*, *Xiphinema*

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50.1
2006
%13.9 2006)
2006 65.9 1997
20.6 23.0
% 69 35.7
(2006) 2006

Sasser and Freckman,) %12.3

.(1987

(Ogawa *et al.*, 1995)

.(2003)

(Lamberti, 1984)

Ogawa *et al.*,)

(1995

Meloidogyne incognita

(Kofoid and White, 1919) Chitwood 1949; *M. javanica* (Treub, 1885)

Chitwood, 1949; *M. arenaria* (Neal, 1889) Chitwood *et al.*, 1952

P. vulnus Allen and Jensen, 1951; *Pratylenchus zeae*

Graham, 1951; *P. crenatus* Sher & Allen's, 1953; *P. brachyurus*

C. xenoplax (Raski, 1952) Godfrey, 1929; *P. penetrans*

Luc & Raski, 1981, *Criconemella curvata* (Raski, 1952) Luc & Raski,

1981

Xiphinema americanum Cobb 1913

Peach Rosette Mosaic Virus (PRMV)

;Ogawa, 1995)

Peach Yellow Bud Mosaic (PYBMV)

.(2002 ; Barker and Clayton, 1973; Whitehead, 1998

Nyczepir) *M. hapla* Chitwood, 1949

Pratylenchus crenatus Loof, (and Halbrecht, 1993

P. thornei Sher and Allen, 1953 (Norton *et al.*, 1984) 1960

Siddiqui) *P. neglectus* (Rensch, 1924) Filipjev & Schur. Stet., 1941

P. penetrans (Cobb, 1917) Chitwood & Oteifa, 1952 (*et al.*, 1973

Criconemella .(Barker and Clayton, 1973)

C. simile (Cobb, 1918) *curvata* (Raski, 1952) Luc & Raski, 1981

C. xenoplax (Raski, 1952) Luc & Raski, 1981 1922 Chitwood, 1949

.(Ogawa, 1995; Jaffee *et al.* 1987)

Longidorus elongates (De Man, 1876) Thorne & Swanger, 1936

Xiphinema .(Knight *et al.*, 1997)

americanum Cobb, 1913

.(Meyer and Hugo, 1994)

Xiphinema pachtaicum (Tulaganov,1938) Kirjanova, 1951

Helicotylenchus

Prunus amygdalus *varicaudatus* Yuen, 1964

H. dihystra (Cobb, 1893) Sher, 1961 .Batsch

.(Lamberti, 1984) *Prunus domestica* L.

63

126

30 - 15

.(Barker *et al.*, 1985)

.(Barker *et al.*, 1985)

5

Baermann Funnel Cobb Sieving

³ 100

(Barker *et al.*, 1985)

40

48

5

(%4)

5

.(Jacob and van Bezooijen, 1984) %2

Grooved

.(x45)

slide

Seinhorst,)

(1959)

10

10

72

2-1

10

(x45)

Perennial Patterns
(Barker *et al.*, 1985)

(

)

Soil

Soil EC

Soil pH

Texture

(1995)

³

10 /

10 /
330

330-20

(

125 315)

10 /

113

%44

90 -10

(1)

³

100 /

Meloidogyne incognita (Kofoid and White, 1919) Chitwood 1949

** * (1)

Meloidogyne incognita

	()	()	(J2)								
				EC	pH	%	%	%			
	8 (0)	0 %	-	-	-	-	-	-	-	-	-
	6 (0)	0 %	-	-	-	-	-	-	-	-	-
	10 (4)	40 %	15-40 (25)	10-50 (30)	1.55	7.8	57.5	12.5	30	SCL	
	6 (4)	67 %	180-450 (315)	50-150 (90)	1.5	7.6	72	13.5	14.5	SL	
	12 (10)	83 %	10-80 (36)	10-70 (30)	1.62	7.9	60	15	25	SCL	
	12 (8)	67 %	10-30 (20)	10-50 (30)	2.1	7.5	53	17	30	SCL	
	12 (8)	67 %	10-60 (35)	20-60 (50)	3.6	7.9	30	32.5	37.5	CL	
	6 (2)	33 %	270-390 (330)	20-40 (30)	1.45	7.7	75	12.5	12.5	SL	
	6 (6)	100%	10-60 (28)	0-20 (10)	1.7	7.7	52.5	17.5	30	SCL	
	6 (2)	33 %	10-240 (125)	0-20 (10)	1.8	8	75	12.5	12.5	SL	
	8 (0)	0 %	-	-	-	-	-	-	-	-	
	8 (0)	0 %	-	-	-	-	-	-	-	-	
Total/ Average	100 (44)	44 %	(113)	(35)	/						
	4 (0)	0 %	-	-	-	-	-	-	-	-	
	8 (0)	0 %	-	-	-	-	-	-	-	-	
	6 (0)	0 %	-	-	-	-	-	-	-	-	
	6 (0)	0 %	-	-	-	-	-	-	-	-	
	(0)2	0 %	-	-	-	-	-	-	-	-	
Total/ Average	(0)26	-	-	-	/						

×(/): (Norton, 1978) % 100 *
 10/ **
 . 3 100/J2

...

/

%4 *Pratylenchus*
 / 30
 %23.1 (2) 3 100
 . 3 100 / 36
Pratylenchus spp. ** * (2)
Xiphinema spp.

		<i>Pratylenchus</i> spp.			<i>Xiphinema</i> spp.		
		()		()	()		()
		8 (0)	0 %	-	8 (0)	0	-
		6 (0)	0 %	-	6 (0)	0	-
		10 (0)	0 %	-	10 (0)	0	-
		6 (0)	0 %	-	6 (2)	33 %	20-40 (30)
		12 (0)	0 %	-	12 (3)	25 %	10-50 (30)
		12 (0)	0 %	-	12 (0)	0	-
		12 (4)	33 %	10-60 (30)	12 (4)	33 %	10-60 (30)
		6 (0)	0 %	-	6 (2)	33 %	20 (20)
		6 (0)	0 %	-	6 (0)	0	-
		6 (0)	0 %	-	6 (0)	0	-
		8 (0)	0 %	-	8 (0)	0	-
		8 (0)	0 %	-	8 (0)	0	-
Total / Average		100 (4)	4.0 %	30	100 (11)	11.0 %	28
		4 (2)	50 %	40-80 (60)	4 (0)	0 %	-
		8 (0)	0 %	-	8 (0)	0 %	-
		6 (3)	50 %	10-40 (30)	6 (0)	0 %	-
		6 (0)	0 %	-	6 (0)	0 %	-
		(1)2	%50	18	2 (0)	0 %	-
Total / Average		26 (6)	23.1 %	36	26 (0)	0.0 %	-

.(Norton, 1978) %100×(/) *
 . 3 100 / **

%11 *Xiphinema* spp.
 28 (2)
 . 3 100 /

- *X. pyrenaicum* Dalmasso, 1964 (Dalmasso, 1969)
- *X. intermedium* Lamberti & Bleve-Zacheo, 1979 (Lamberti and Bleve-Zacheo, 1979)

$\frac{\%26}{100} \times \frac{Paratylenchus}{223} = \frac{3}{100} \times 1035 = 30.975 \approx 31\%$
 $\frac{\%11.5}{100} \times \frac{Amplimerlinius}{18} = \frac{3}{100} \times 1035 = 30.975 \approx 31\%$

Paratylenchus spp. ** * (3)
Amplimerlinius spp.

	<i>Paratylenchus</i>			<i>Amplimerlinius</i>		
	()	()	()	()	()	()
	8 (4)	50 %	20-50 (30)	8 (0)	0 %	-
	6 (2)	33 %	80-100 (90)	6 (0)	0 %	-
	10 (0)	0 %	-	10 (2)	20 %	20-40 (30)
	6 (0)	0 %	-	6 (2)	33 %	10-50 (30)
	12 (0)	0 %	-	12 (6)	50 %	30-120 (70)
	12 (0)	0 %	-	12 (0)	0 %	-
	12 (8)	67 %	60-200 (125)	12 (8)	67 %	80-220 (145)
	6 (4)	67 %	30-2040 (1035)	6 (2)	33 %	80-120 (100)
	6 (4)	67 %	10-60 (30)	6 (4)	67 %	10-80 (30)
	6 (0)	0 %	-	6 (0)	0 %	-
	8 (0)	0 %	-	8 (8)	100 %	10-60 (25)
	8 (4)	50 %	10-60 (30)	8 (4)	50 %	10-70 (30)
Total/Average	100 (26)	26.0 %	223	100 (36)	36.0 %	52
	4 (2)	50 %	30 (30)	4 (0)	0 %	-
	8 (0)	0 %	-	8 (0)	0 %	-
	6 (0)	0 %	-	6 (0)	0 %	-
	6 (0)	0 %	-	6 (0)	0 %	-
	2 (1)	50 %	7	2 (1)	50 %	29
Total/Average	26 (3)	11.5 %	18	26 (1)	3.8 %	29

$\frac{100}{100} \times \frac{3}{100} = 3\%$ *
 $\frac{100}{100} \times \frac{3}{100} = 3\%$ **

%36 *Amlimerlinius* spp.
Tylenchus spp. *Helicotylenchus* spp.
 3 100 / 29 46 52 %14 %21

%11.5 *Helicotylenchus* spp. *Paratylenchus* spp.
 %38.5
 3 100 / 120 18
 %3.8 *Amlimerlinius* spp.
 3 100 29
Tylenchus spp.
 .(4)

Tylenchus Helicotylenchus spp. (4) spp.

		<i>Helicotylenchus</i>			<i>Tylenchus</i>		
		()		()	()		()
		8 (4)	50 %	10-60 (30)	8 (0)	0 %	-
		6 (0)	0 %	-	6 (0)	0 %	-
		10 (0)	0 %	-	10 (0)	0 %	-
		6 (0)	0 %	-	6 (0)	0 %	-
		12 (3)	25 %	30-90 (50)	12 (2)	17 %	30 (30)
		12 (8)	67 %	10-80 (30)	12 (0)	0 %	-
		12 (8)	67 %	10-120 (50)	12 (10)	83 %	10-50 (27)
		6 (2)	33 %	20-100 (60)	6 (2)	33 %	20-40 (30)
		6 (0)	0 %	-	6 (0)	0 %	-
		6 (0)	0 %	-	6 (0)	0 %	-
		8 (0)	0 %	-	8 (0)	0 %	-
		8 (0)	0 %	-	8 (0)	0 %	-
Total /Average		100 (21)	21.0 %	46	100 (14)	14.0 %	29
		4 (0)	-	-	4 (0)	0 %	-
		8 (4)	50 %	10-70 (30)	8 (0)	0 %	-
		6 (3)	50 %	20-160 (90)	6 (0)	0 %	-
		6 (3)	50 %	120-380 (240)	6 (0)	0 %	-
		2 (0)	0	-	2 (0)	0 %	-
Total /Average		26 (10)	38.5 %	120	26 (0)	0.0 %	-

.(Norton, 1978) %100×(/) : *
 3 100 / **

Meloidogyne incognita

(Sasser and Carter, 1985)

(Lamberti, 1984; Al Ahmed, 1987)

(2003)

10 (%12.5 10/ 330 %12.5 %75.0:)
10/ (%37.5 %32.5 %30.0:)

(Stirling, 1991)

()

)

(

Nyczepir and)

(2003

2002

1995

Halbrendt, 1993

(
(1985) Sasser Carter

%16
(McKenry, 1989)

(2002)
Xiphinema spp.

%10
(Decraemer and Geraet, 2006) Michigan
Helicotylenchus spp. Steiner, 1945
Tylenchorhynchus spp. Cobb, 1913, Micoletzky, 1922
(Decraemer and Geraet, 2006)

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